CLAIMS

1. A purification method for oxidatively damaged guanine nucleosides generated as a result of guanine damage in DNA or RNA, comprising a first purification step for purifying oxidatively damaged guanine nucleosides contained in a sample by anion-exchange chromatography.

2. A purification method for oxidatively damaged guanine nucleosides according to claim 1, wherein said oxidatively damaged guanine nucleoside is 8-hydroxydeoxyguanosine (8-OH-dG).

3. A purification method for 8-hydroxydeoxyguanosines (8-OH-dG) contained in a sample, wherein 8-hydroxyguanosines (ribonucleosides) (8-OH-rGuo) are previously added to the sample as an internal standard marker for 8-OH-dG so as to purify it.

4. A purification method for 8-OH-dG (8-OH-dG) contained in a sample, wherein 8-hydroxyguanosine (ribonucleosides) (8-OH-rGuo) is previously added to the sample, comprising a first purification step for purifying said sample by anion-exchange chromatography, and a second purification

step for further purifying the fraction containing 8-OH-dG obtained in the first purification step by reverse phase chromatography.

5. A purification method for oxidatively damaged guanine nucleosides according to claim 1 or claim 2, wherein said sample is urine.

6. A purification method for 8-hydroxydeoxyguanosines (8-OH-dG) according to claim 3 or claim 4, wherein said sample is urine.

7. A measuring method for oxidatively damaged guanine nucleosides comprising a measuring step for measuring purified oxidatively damaged guanine nucleosides obtained by the purification method of any one of claim 1, claim 2 and claim 5.

8. A measuring method for 8-OH-dG comprising a measuring step for measuring purified 8-hydroxydeoxyguanosines (8-OH-dG) obtained by the purification method of any one of claim 3, claim 4 and claim 6.

9. A measuring method for 8-OH-dG according to claim 8, wherein said purified

8-hydroxydeoxyguanosines (8-OH-dG) are measured in anion-exchange chromatography in the order of;

(1) peak recognition of ribonucleosides 8-OH-rGuo,

(2) starting of 8-OH-dG fractionation after a fixed time,

(3) finishing of 8-OH-dG fractionation after a fixed time, and

(4) optionally mixing 8-OH-dG fractions, and then injected into a reverse phase column.

10. An apparatus for purifying and measuring 8-hydroxydeoxyguanosines (8-OH-dG), comprising;

an anion-exchange column (HPLC-1) which specifically absorbs 8-OH-dG contained in a sample,

a UV detector which detects an elution position of 8-hydroxyguanosine (ribonucleoside) (8-OH-rGuo),

a reverse phase column (HPLC-2) which further purifies the fraction containing 8-OH-dG obtained from the anion-exchange column (HPLC-1), and

a detector which measures the purified 8-OH-dG obtained from the reverse phase column (HPLC-2).

11. A program for controlling a process for

recovering 8-hydroxydeoxyguanosines (8-OH-dG) contained in a sample by column chromatography, which executes on a computer processes for:

receiving a peak signal of a marker (8-OH-rGuo) previously added to the sample from a UV detector;

outputting a signal to open a valve connected to a sampler, during 8-OH-dG elution after a fixed time;

starting fractionation; and

outputting a fractionation termination signal after another fixed time;

and then outputting a signal to inject the obtained 8-OH-dG fraction into a second purifying column;

thereby purifying and recovering a detected substance (8-OH-dG) eluted from the column.